

THE AMERICAN GENERA OF ASILIDAE (DIPTERA): KEYS FOR IDENTIFICATION WITH AN ATLAS OF FEMALE SPERMATHECAE AND OTHER MORPHOLOGICAL DETAILS. IX.9. SUBFAMILY ASILINAE LEACH -MYAPTEX-GROUP, WITH THE PROPOSAL OF TWO NEW GENERA AND A CATALOGUE OF THE NEOTROPICAL SPECIES¹

JORGE N. ARTIGAS² & NELSON PAPAVERO³

ABSTRACT

A key is given for the identification of the 7 American genera of the *Myaptex*-group of Asilinae (Asilidae): *Atractocoma* Artigas, 1970; *Furcilla* Martin, 1975; *Martinella*, gen. n. (type-species, *Asilus lestes* Williston); *Myaptex* Hull, 1962; *Myaptexaria*, gen. n. (type-species, *Myaptex vexillaria* Artigas); *Rhadinósoma* Artigas, 1970; and *Wilcoxius* Martin, 1975. A catalogue of the neotropical species is included.

RESUMEN

Se da una clave para la identificación de los 7 géneros americanos del grupo *Myaptex* de Asilinae (Asilidae): *Atractocoma* Artigas, 1970; *Furcilla* Martin, 1975; *Martinella*, gen. n. (especie-tipo, *Asilus lestes* Williston); *Myaptex* Hull, 1962; *Myaptexaria*, gen. n. (especie-tipo, *Myaptex vexillaria* Artigas); *Rhadinósoma* Artigas, 1970; y *Wilcoxius* Martin, 1975. Se incluye un catálogo de las especies neotropicales.

INTRODUCTION

This is the part IX.9 of a serie of papers intended as a preliminary effort to define the American genera of Asilidae, describing the new genera, preparatory to the elaboration of a catalogue of Neotropical species for inclusion in the forthcoming World Catalogue of Flies, now being prepared by the U.S. Department of Agriculture and U.S. National Museum of

Natural History, Washington, D.C.

Previous parts in this series were published as follows:

Part I (Key to subfamilies, subfamily Leptogastrinae): Gayana, Zool. 52 (1-2): 95-114, 1988;

Part II (Dasypogoninae): Gayana, Zool. 52(3-4): 199-260, 1988;

Part III (Trigonimiminae): Bol. Soc. Biol. Concepción, 60: 35-41, 1989;

Part IV (Laphriinae, except Atomosiini): Bolm. Mus. paraense E. Goeldi, Zool. 4(2):211-255, 1988;

Part V (Stichopogoninae): Bol. Soc. Biol. Concepción, 61: 39-47, 1990;

Part VI (Laphriinae, Atomosiini): Gayana, Zool. 55(1): 53-87, 1991;

Part VII.1 (Stenopogoninae, key to tribes): Gayana, Zool. 55(2): 139-144, 1991.

¹This research was supported by the Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP, Grants 83/1772-5, 86/2227-1, 87/3170-8 and 94/2344-6), and Proyecto N° 203812 Dirección de Investigación, Universidad de Concepción.

²Universidad de Concepción-Chile, Facultad de Ciencias Naturales y Oceanográficas, Depto. Zoología.

³Museu de Zoologia, Universidade de São Paulo. Pesquisador do Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq, Proc. n° 30.0994/79).

(Received: August 12, 1995. Accepted: September 15, 1995)

Part VII.2 (Stenopogoninae, Tribes Acronychini, Bathypogonini and Ceraturgini): Gayana, Zool. 55(3): 247-255, 1991;

Part VII.3 (Stenopogoninae, Tribes Dioctriini and Echthodopini): Gayana, Zool. 55(4): 261-266, 1992;

Part VII.4 (Stenopogoninae, Tribe Enigmomorphini): Bol. Soc. Biol. Concepción 62: 27-53, 1992;

Part VII.5 (Stenopogoninae, Tribe Tillobromini): Rev. Chil. Ent. 19: 17-27, 1992;

Part VII.6 (Stenopogoninae, Tribes Phellini, Plesiommatini, Stenopogonini and Willistonini): Gayana, Zool. 57(2): 309-321, 1994;

Part VII.7 (Stenopogoninae, Tribe Cyrtopogonini): Bol. Soc. Biol. Concepción 62:55-81, 1992;

Part VIII (Laphystiinae): Arquivos de Zoologia, Sao Paulo

Part IX.1 (Asilinae, key to generic group): Arquivos de Zoologia, Sao Paulo

Part IX.2 (Asilinae, *Efferia*-group): Arquivos de Zoologia, Sao Paulo

Part IX.3 (Asilinae, *Proctacanthus*-group): Gayana, Zool. 59 (2)

Part IX.4 (Asilinae, *Glaphyropyga*-group): Bol. Soc. Biol. Concepción

Part IX.5 (Asilinae, *Lochmorhynchus*-group): Gayana, Zool. 59 (2)

Part IX.6 (Asilinae, *Mallophora*-group): Arquivos de Zoología, Sao Paulo

Part IX.7 (Asilinae, *Eicherax*-group): Bol. Soc. Biol. Concepción

Part IX.8 (Asilinae, *Lecania*-group): Gayana, Zool.

MATERIAL AND METHODS

The material used in this series belongs mainly to the Museu de Zoologia da Universidade de São Paulo, Brazil and to the Departamento de Zoología, Universidad de Concepción, Chile (UCCC).

The methodology employed in the dissection and preservation of the male terminalia, female spermathecae and other morphological parts is the same employed by Artigas (1971).

List of abbreviations:

BERLIN: Berlin Museum

BMNH: British Museum (Natural History), London

CAS: California Academy of Sciences

COR: Cornell University

HT: Holotype

NT: Neotype

UCCC: Colecciones Científicas, Universidad de Concepción

RESULTS

MYAPTEX-GROUP

Key to American genera

1. Face decidedly gibbous (Figs. 1, 22) 2
- Face evenly rounded or at most produced at subcranial margin, but never decidedly gibbose (Figs. 32, 43, 55, 67) 4
- 2(1). Face at antennal level 4/5 the width of an eye, slightly widened below (Fig. 2), entirely golden pollinose. Mystax with bristles over entire gibbosity, bristles reaching apex of proboscis (Fig. 1). Scape twice as long as pedicel; first flagellomere subequal to scape. Mesonotum with only posterior dorsocentral bristles. Scutellum with 2 marginal bristles, disc with scanty, short pile. Wing shorter than abdomen. Femora robust. Male terminalia as in Figs. 5-7: epandrium with an apical incision. Aedeagus with 3 tubes (Fig. 8). Ovipositor as in Figs. 9-10. Spermathecae with 3 very characteristic capsules (Fig. 11); endosternite extremely elongated, the two arms running closely together. Length, 10-11 mm (México, Nicaragua, El Salvador) *Wilcoxius* Martin, 1975
- Face at antennal level 3/5 the width of an eye and widening below, at subcranial margin 1.5 times as wide as at antennal level (Fig. 21), white or whitish-grey pollinose. Mystax occupying entire gibba, with mixed white and black bristles, the black ones slightly surpassing tip of proboscis (Fig. 22). Scape, mesonotum, scutellum and femora, same as above. Male epandrium never with an apical incision (Figs. 14-16, 24-26). Aedeagus with only 2 tubes (Figs. 17, 27). Ovipositor as in Figs. 19, 29, 30. Spermathecae with only 2 capsules (Figs. 20, 31) (Chile) 3
- 3(2). Scutellar disc only with scattered long fine pile; normally 4 black, marginal bristles. Anterior dorsocentral bristles present. Male terminalia with characteristic very inflated epandria, their apices curved in apically (Figs. 14-16). Length, 8-13 mm) *Myaptex* Hull
- Scutellar disc with two tufts of abundant, proclinated, long, bristles hairs; from 2 to several marginal scutellar bristles (sometimes mixed black and white). Anterior dorsocentral bristles present (*M. vexillaria*

- (Artigas)) or absent (*M. acuta* (Artigas) and *M. virilis* (Artigas)). Male epandria not inflated, their apices blunt, not curved in at apex (Figs. 24-26). Length, 17-19 mm *Myaptexaria*, gen. n.
- 4(1). Body and legs with characteristic, abundant, white, squamiform hairs and setae, usually compressed against the integument (Fig. 36) (see also Artigas, 1970: fig. 220). Face evenly rounded, the mystax with long bristles at the subcranial margin and shorter ones above (Figs. 32-33). Frons and face narrow (Fig. 33). Mesonotum with only posterior dorsocentrals. Scutellum with 6 marginal bristles, its disc with many proclinate bristles. Fork of R_{4+5} beyond end of discal cell (Fig. 34). Male terminalia on the same axis of the body; epandrium 1.5 times as long as wide, upper apical angle produced; hypandrium short (Figs. 36-38). Ovipositor laterally compressed, in lateral view very broad, 'hunched', extremely characteristic (Figs. 39-40). Spermathecae with 3 ovoid capsules, endosternite very short (Fig. 41). Length, 11-13 mm (Chile, Argentina) *Atractocoma* Artigas, 1970
- Body and legs never with squamiform hairs or setae. Other combination of characters 5
- 5(4). Mystax with a few long bristles restricted to subcranial margin, reaching tip of proboscis, and very few scattered bristles, half the length of the former, above, up to the middle of the face; face very slightly produced at oral margin, almost flat on the remainder (Figs. 42-43). Face at antennal level 3/4 width of an eye; frons narrow. Anterior dorsocentral bristles absent. Disc of scutellum with very scanty, short hairs; 2 marginal bristles. Male terminalia as in Figs. 46-48: epandrium without apical incision. Aedeagus apparently with only one tube (Fig. 49). Ovipositor conical (Figs. 51-52). Spermathecae characteristically with 3 elongate coiled capsules (Fig. 53); the 3 spermathecae emerge from a relatively long and robust common duct; endosternite 'Y' shaped, short and robust, very characteristic. Length, 11-13 mm. Very delicate, slender flies (Chile) *Rhadinostoma* Artigas, 1970
- Mystax with abundant bristles occupying 3/4 of face. Other combinations of characters 6
- 6(5) Face and frons, as seen in frontal view, nearly parallel-sided (Figs. 54-55). Male terminalia as in Figs. 58-60: epandrium long and slender. Aedeagus (Fig. 61) with 2 tubes. Hypandrium without apical tuft of hairs. Proximal half of ventral surface of fore and middle femora, all the tibiae and tarsi, and coxae (especially fore and middle ones) with very neat, white, long, strong bristles, in addition to a more or less long, white, dense, appressed short, bristly like hairs. Length, 10-11 mm (Mexico: Sonora) *Furcilla* Martin, 1975
- Face and frons, as seen in frontal view, roughly triangular-shaped, the face widening toward subcranial margin (Fig. 66). Male terminalia as in Figs. 70-72: hypandrium with a dense tuft of long apical hairs; epandrium broad. Aedeagus with 3 short tubes (Fig. 73) [Females not available for dissection]. Length, 10 mm. (Mexico: Guerrero, Morelos) *Martinella*, gen. n.

Genus *Atractocoma* Artigas

Atractocoma Artigas, 1970: 259. Type-species, *nivosa* Artigas (orig. des.).

- *nivosa* Artigas, 1970: 260, figs. 220-228, 488. Type-locality: Chile, Aysén, Chile Chico, Laguna Buenos Aires. HT: UCCC.

Genus *Furcilla* Martin

Furcilla Martin, 1975: 76. Type-species, *dorothyae* Martin (orig. des.).

- *dorothyae* Martin, 1975: 76, fig. 48. Type-locality: Mexico, Sonora, Navajoa, highway 15, km post 1766. HT: CAS.

- *petila* Martin, 1975: 77, fig. 53. Type-locality: Mexico, Sonora, 5 mi. e. Navajoa. HT: CAS.

Genus *Martinella* gen. n.

This new genus may be recognized as shown in the key above.

Type-species, *Asilus lestes* Williston.

The type-species was included by Martin (1975) among the species of *Wilcoxius*. However, it differs very much from the species of that genus.

- *lestes* (Williston), 1901: 331 (*Asilus*). Type-locality: Mexico, Guerrero, Chilpancingo. Distr.- Mexico (Guerrero, Morelos). HT: BMNH. *n. comb.*

Genus *Myaptex* Hull

Myaptex Hull, 1962: 508. Type-species, *hermanni* Hull (orig. des.).

- *brachyptera* (Philippi), 1865: 698 (*Asilus*). Type-locality: Chile, Colchagua. Distr. Chile (Arauco, Cautín, Concepción, Curicó, Linares, Maule, Malleco, Santiago, Talca, Valparaíso). TP: lost. NT (Chile, Malleco, Angol; Artigas, 1970:324): UCCC.

- *hermanni* Hull, 1962: 509, figs. 195, 688, 1490, 2267, 2313, 2437, 2445. Type-locality: Chile, Concepción. Distr.-Chile (Bío-Bío, Concepción, Curicó, Linares, Malleco, Maule, O'Higgins, Santiago, Valparaíso). HT: BERLIN.

Genus *Myaptexaria*, gen. n.

In our opinion, the very different scutellar pilosity of the species included in this genus and the very characteristic male terminalia with a very inflated epandria, warrant its erection (Figs. 24-26).

Type-species, *Myaptex vexillaria* Artigas.

– *acuta* (Artigas), 1980: 365, figs. 369-370 (*Myaptex*). Type-locality: Chile, Castilla, prov. Atacama. Distr.-Atacama. HT: UCCC. *n. comb.*

– *vexillaria* (Artigas), 1970: 329, figs. 323-328, 454 (*Myaptex*). Type-locality: Chile, Coquimbo, Vicuña. Distr.-Chile (Aconcagua, Coquimbo, Santiago, Valparaiso). HT: UCCC. *n. comb.*

– *virilis* (Artigas), 1970: 331, figs. 329-333, 449 (*Myaptex*). Type-locality: Chile, Atacama, Zapata, Termas Socos. Distr.-Chile (Atacama, Aconcagua, Coquimbo). HT: UCCC. *n. comb.*

Genus *Rhadinósoma* Artigas

Rhadinósoma Artigas, 1970: 346. Type-species, *calderense* Artigas (orig. des.).

– *calderense* Artigas, 1970: 347, figs. 378-384, 469. Type-locality: Chile, Atacama, 40 km se. Caldera. Distr.-Chile (Atacama). HT: UCCC.

Genus *Wilcoxius* Martin

Wilcoxius Martin, 1975: 71. Type-species, *truncus* Martin (orig. des.).

– *acutulus* Martin, 1975: 73, fig. 47. Type-locality: Nicaragua, Condegua, 2025 feet. Distr.-Nicaragua, El Salvador. HT: CAS.

– *crenus* Martin, 1975: 74, figs. 49, 67. Type-locality: Mexico, Chiapas, Nachic. HT: COR.

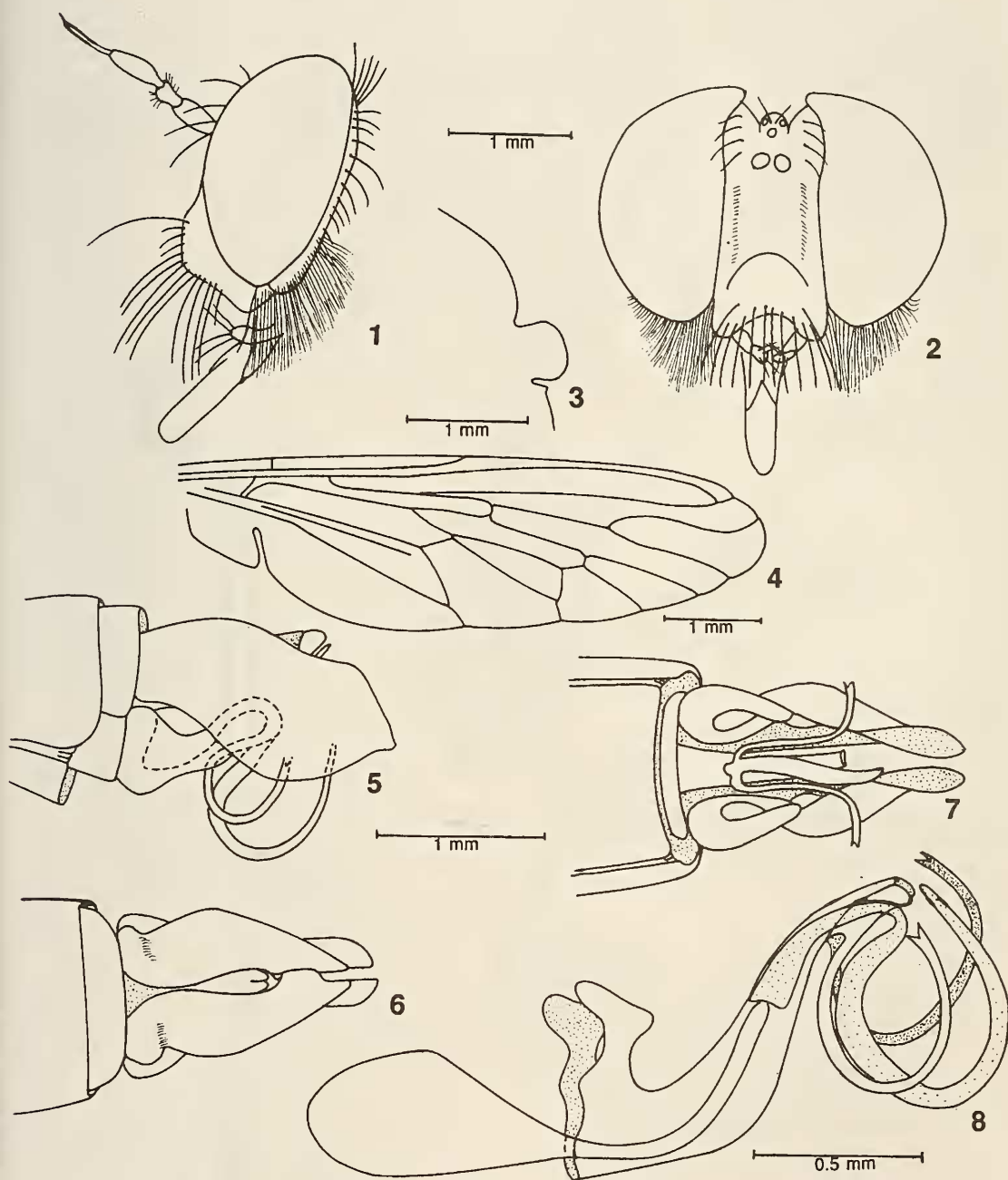
– *truncus* Martin, 1975: 75, figs. 46, 66. Type-locality: Mexico, Veracruz. Distr.-Mexico (Oaxaca, Veracruz). HT: CAS?

LITERATURE CITED

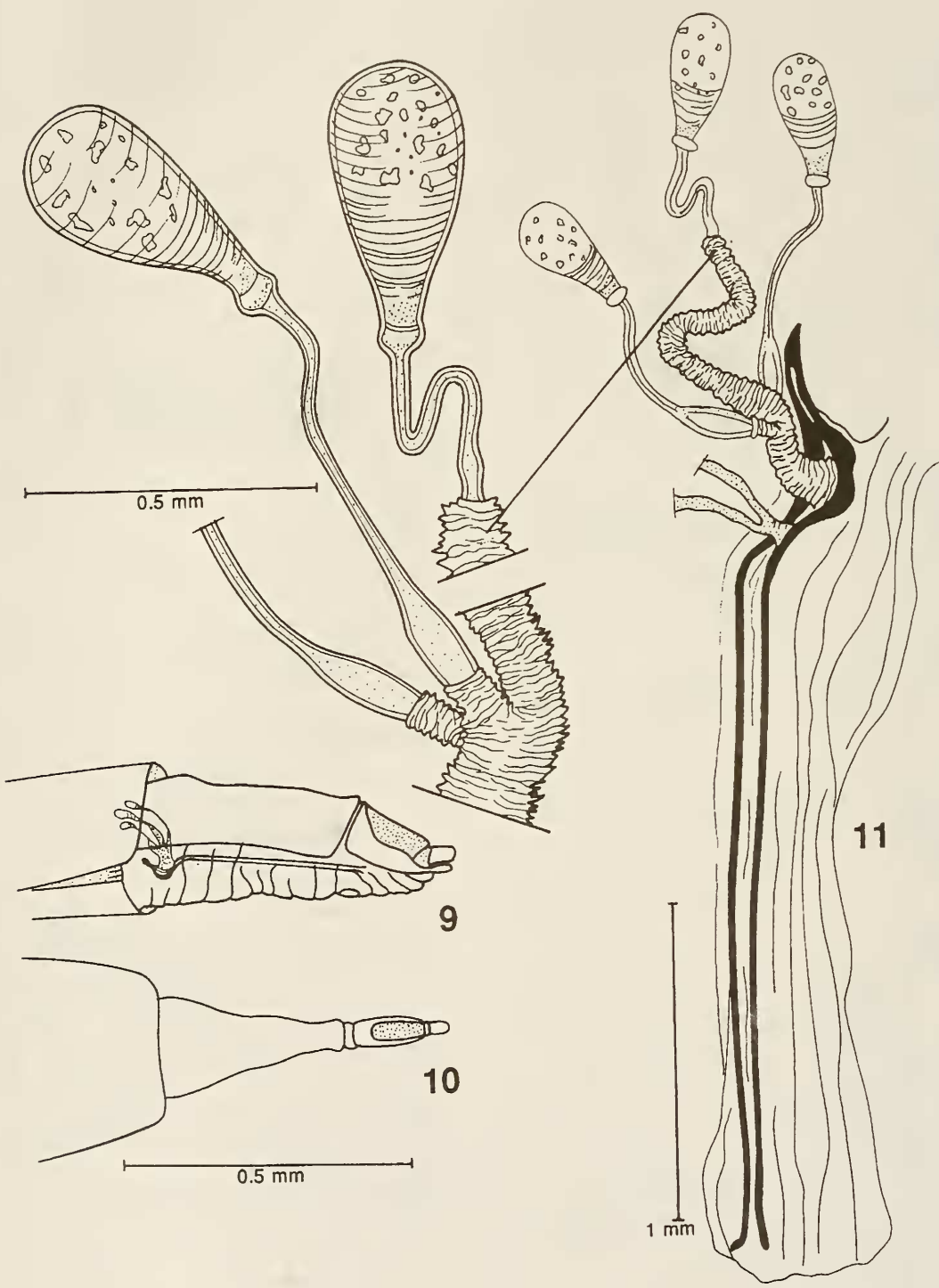
- ARTIGAS, J.N., 1970. Los asílidos de Chile (Diptera-Asilidae). *Gayana, Zool.*, 17: 1-472, 504 figs.
- ARTIGAS, J.N., 1971. Las estructuras quitinizadas de la spermatheca y funda del pene de los asílidos y su valor sistemático a través del estudio por taxonomía numérica. *Gayana, Zool.*, 18: 1-106, 138 figs.
- ARTIGAS, J. N., *Myaptex acutus* n.sp. asílido nuevo de Chile (Diptera-Asilidae). *Brenesia*, 17: 365-370, 13 figs.
- HULL, F.M., 1962. Robber flies of the world. The genera of the family Asilidae. *Smithson. Inst. Bull.*, 224 (1): 1-432, (2): 433-907, 2536 figs.
- MARTIN, C.H., 1975. The generic and specific characters of four old and six new Asilini genera in the western United States, Mexico, and Central America (Diptera: Asilidae). *Occas. Pap. Calif. Acad. Sci.*, 119: 1-107, 78 figs., 1 table, 1 map.
- PHILIPPI, R.A., 1865. Aufzählung der chilenischen Dipteren. *Abh. zool.-bot. Ges. Wien*, 15: 595-782.
- WILLISTON, S.W., 1901. Supplement (part), pp. 249-272, 273-296, 297-328, 329-332, pl. 4-5, pl. 6, figs. 1-6, in F.D. Godman & O. Salvin, eds., *Biologia Centrali-Americana. Zoologia-Insecta-Diptera*, 1: 378 pp., 6 pls. London.

INDEX

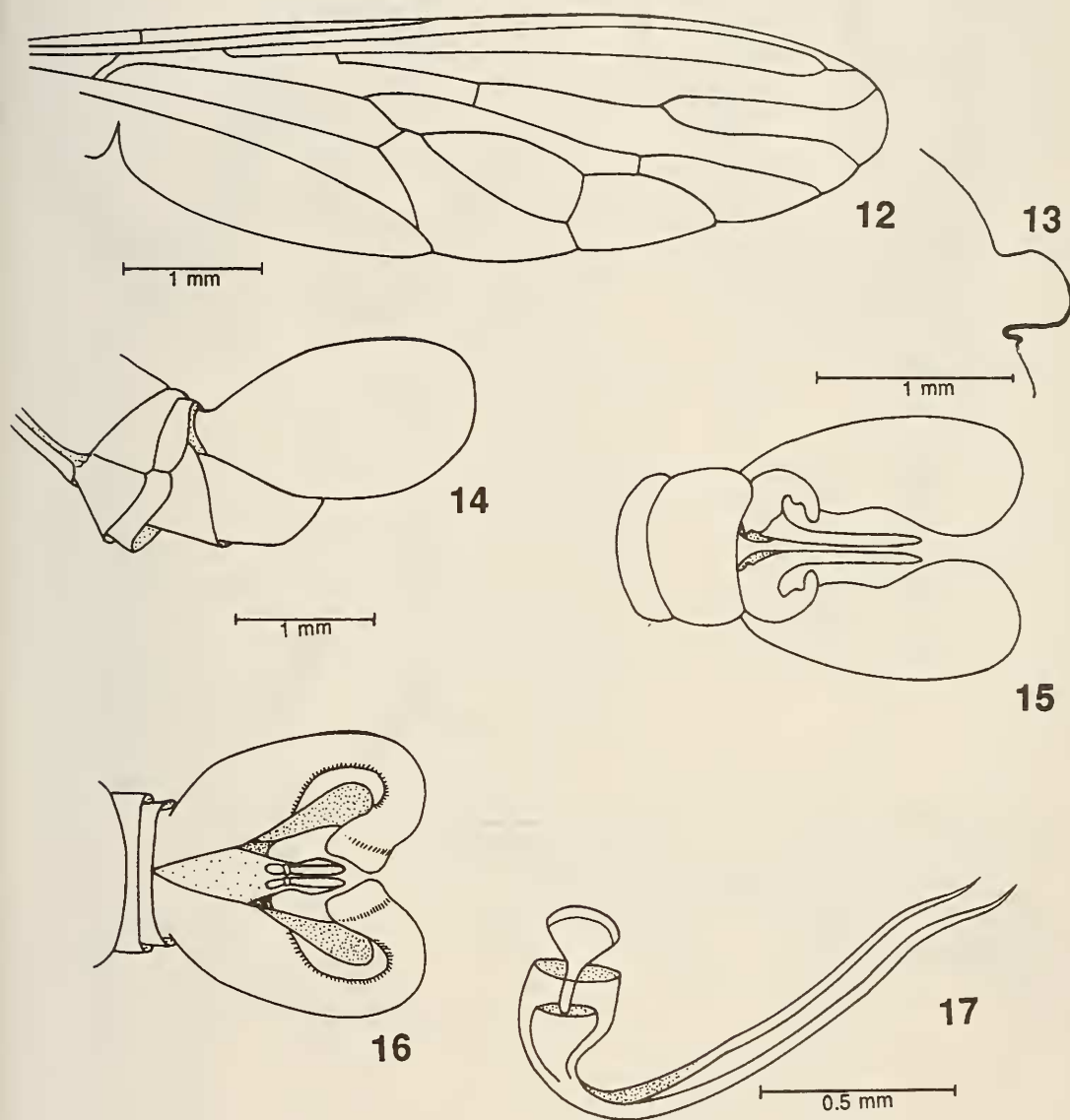
	págs.	figs.
<i>acuta</i> , <i>Myaptexaria</i>	58	
<i>acutulus</i> Wilcoxius	59	9-11
<i>Atractocoma</i>	57	
<i>brachyptera</i> , <i>Myaptex</i>	57	12-17
<i>calderense</i> , <i>Rhadinósoma</i>	58	42-53
<i>crenus</i> Wilcoxius	58	
<i>dorothyae</i> , <i>Furcilla</i>	57	54-65
<i>Furcilla</i>	57	
<i>hermanni</i> , <i>Myaptex</i>	57	18-20
<i>lestes</i> , <i>Martinella</i>	57	66-73
<i>Martinella</i> , gen. n.	57	
<i>Myaptex</i>	56, 57	
<i>Myaptexaria</i> , gen. n.	57, 58	
<i>nivosa</i> , <i>Atractocoma</i>	57	32-41
<i>petila</i> , <i>Furcilla</i>	57	
<i>Rhadinósoma</i>	57, 58	
<i>truncus</i> , Wilcoxius	58	1-8
<i>vexillaria</i> , <i>Myaptexaria</i>	58	21-31
<i>virilis</i> , <i>Myaptexaria</i>	58	
<i>Wilcoxius</i>	56, 58	



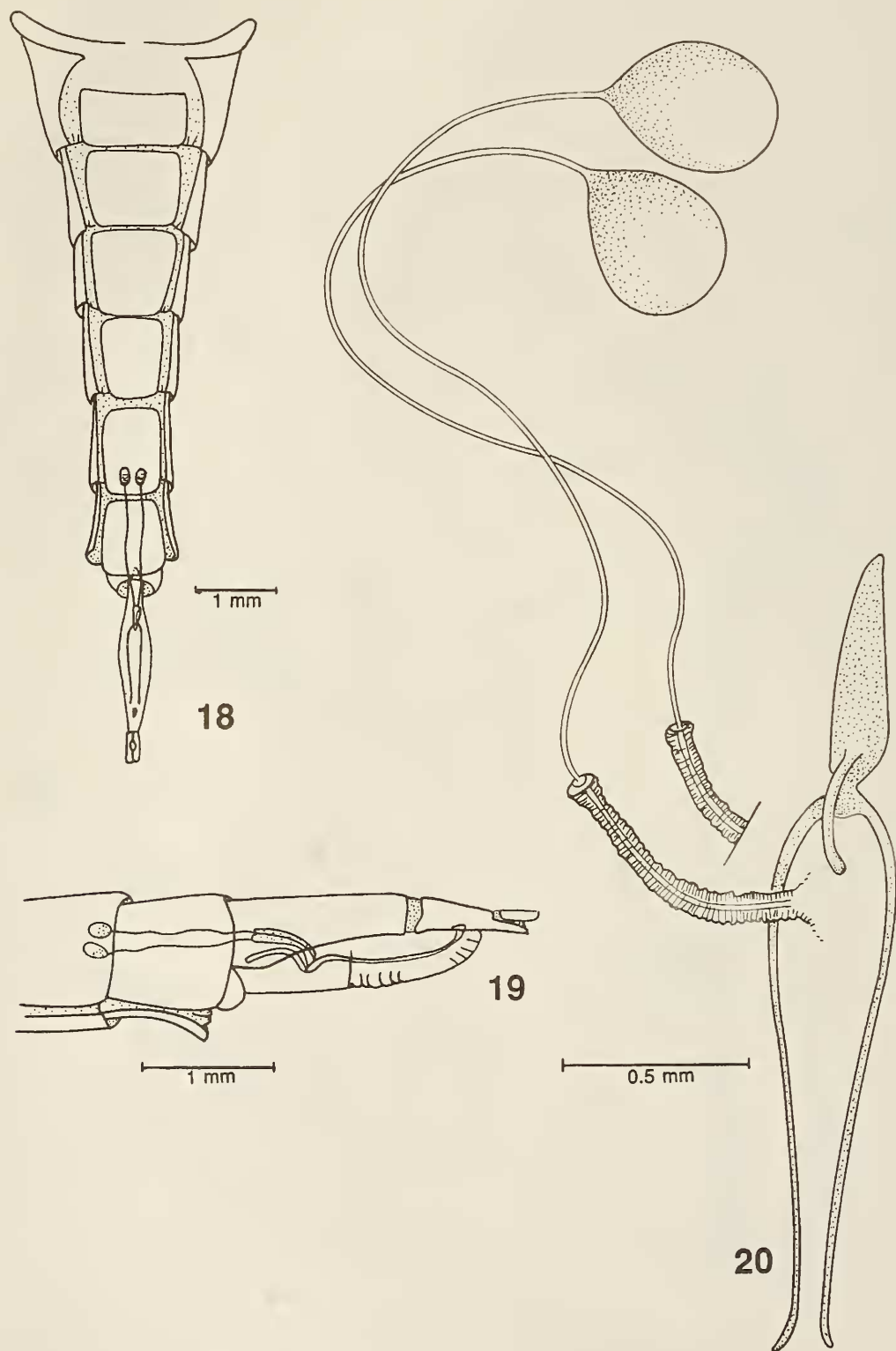
Figures 1-8. *Wilcoxius truncus* Martin. 1-2: head in lateral and frontal views; 3: profile of scutellum; 4: wing; 5-7: male terminalia in lateral, dorsal and ventral views; 8: aedeagus.



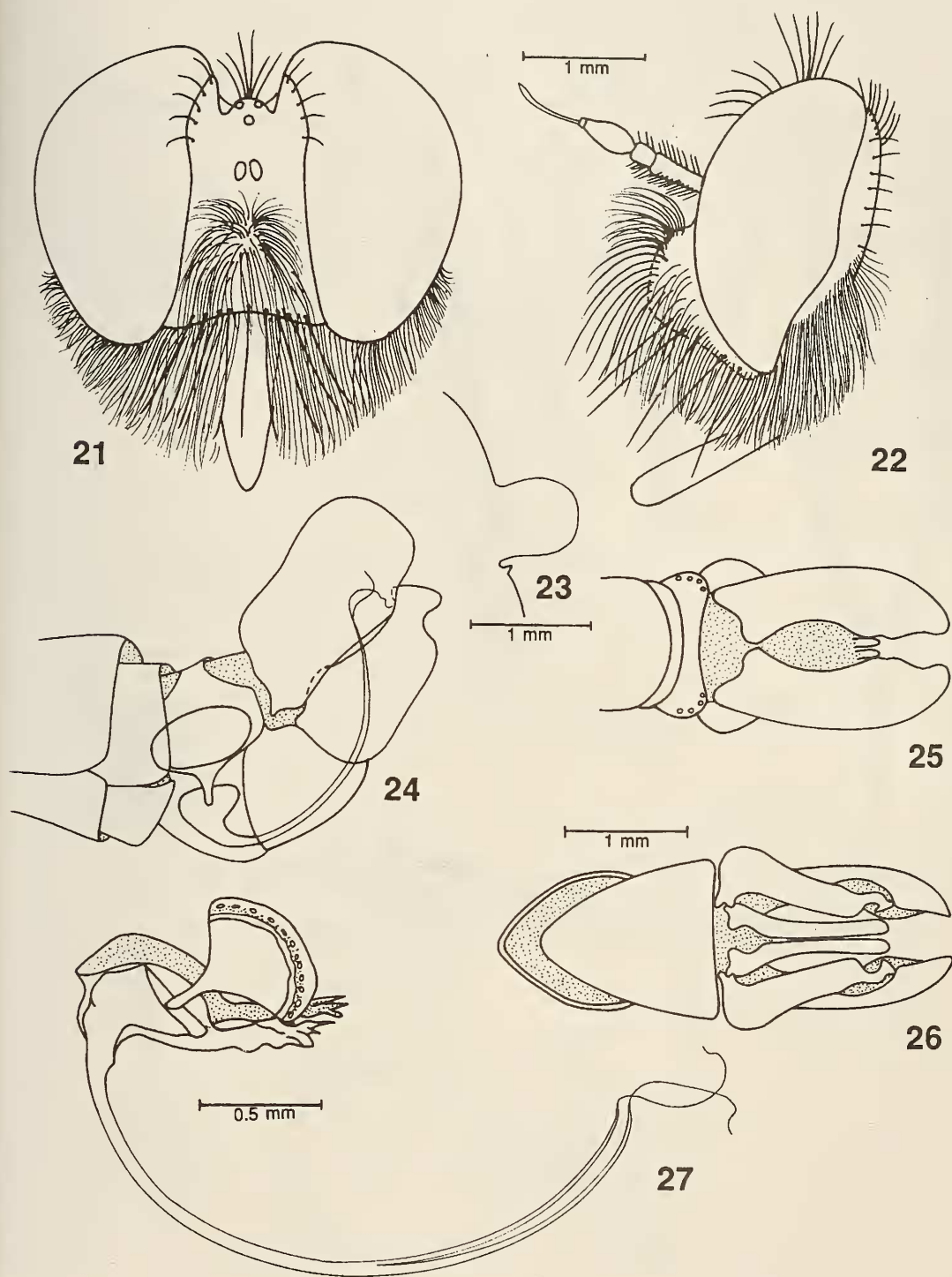
Figures 9-11. *Wilcoxius acutulus* Martin. 9: ovipositor, lateral view, showing situation of spermathecae; 10: ovipositor, dorsal view; 11: spermathecae.



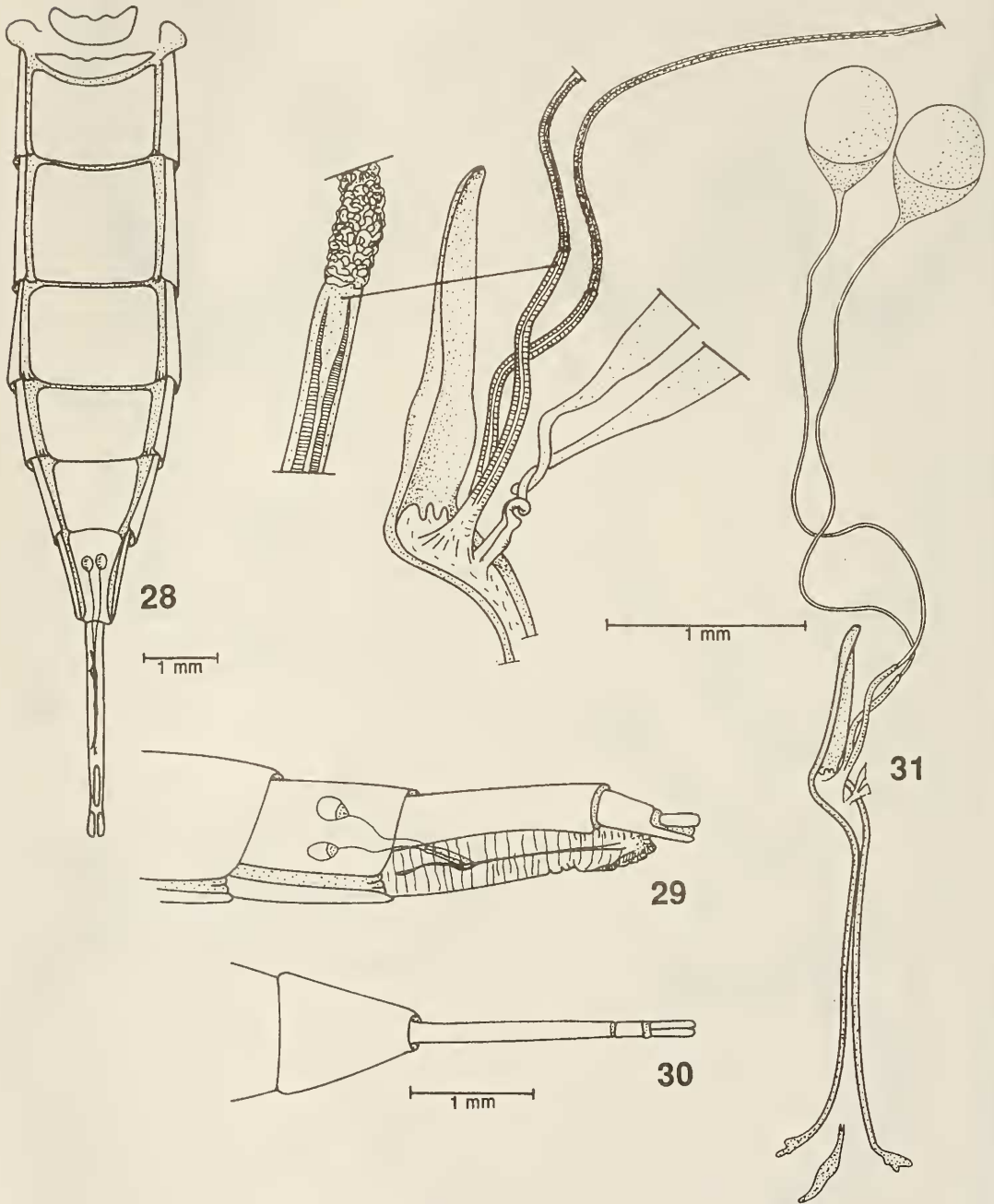
Figures 12-17. *Myaptex brachyptera* (Philippi). 12: wing; 13: profile of scutellum; 14-16: male terminalia in lateral, dorsal and ventral views; 17: aedeagus.



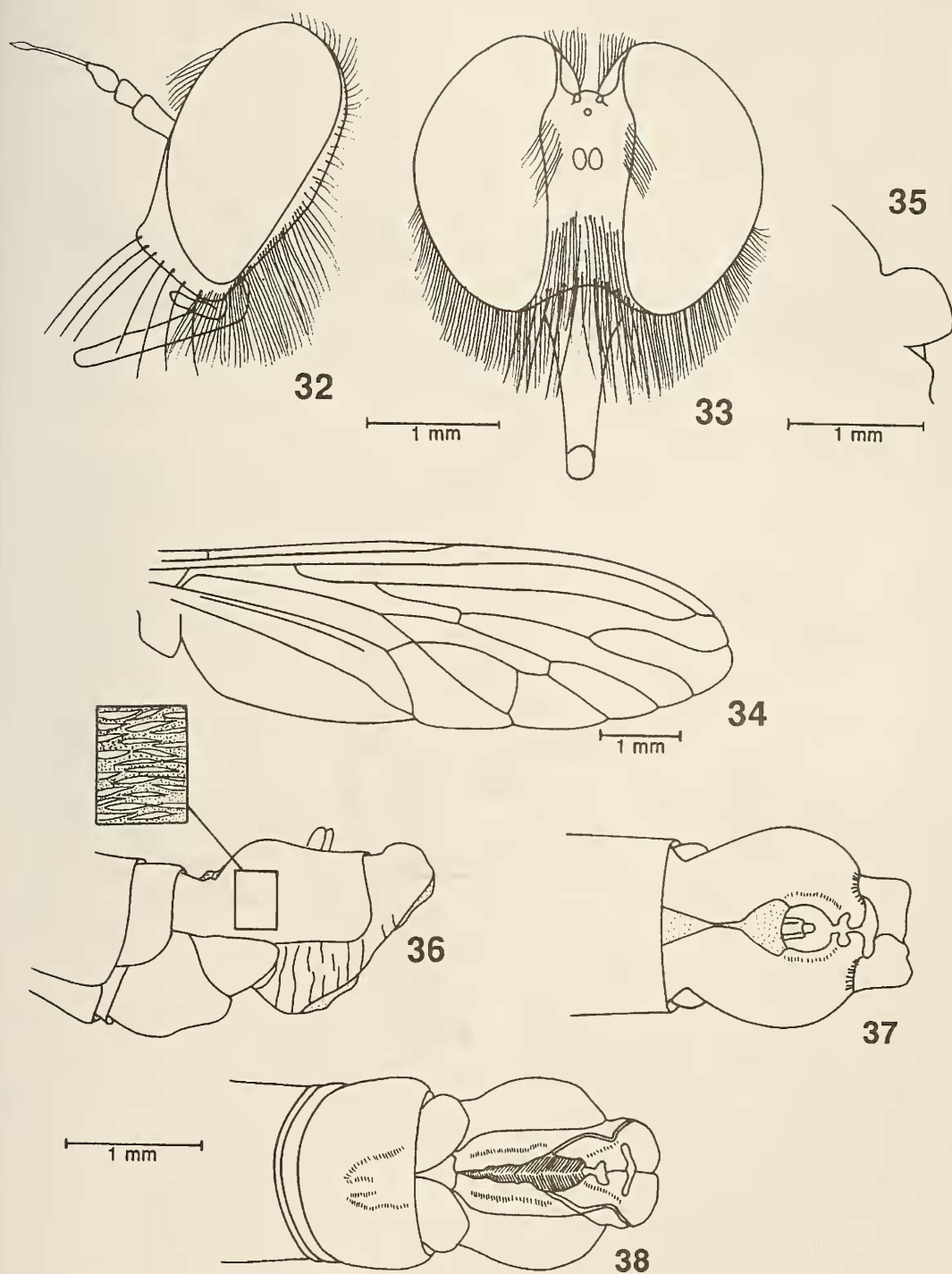
Figures 18-20. *Myaptex hermanni* Hull. 18: female abdomen, ventral view, showing situation of spermathecae; 19: ovipositor, lateral view; 20: spermathecae.



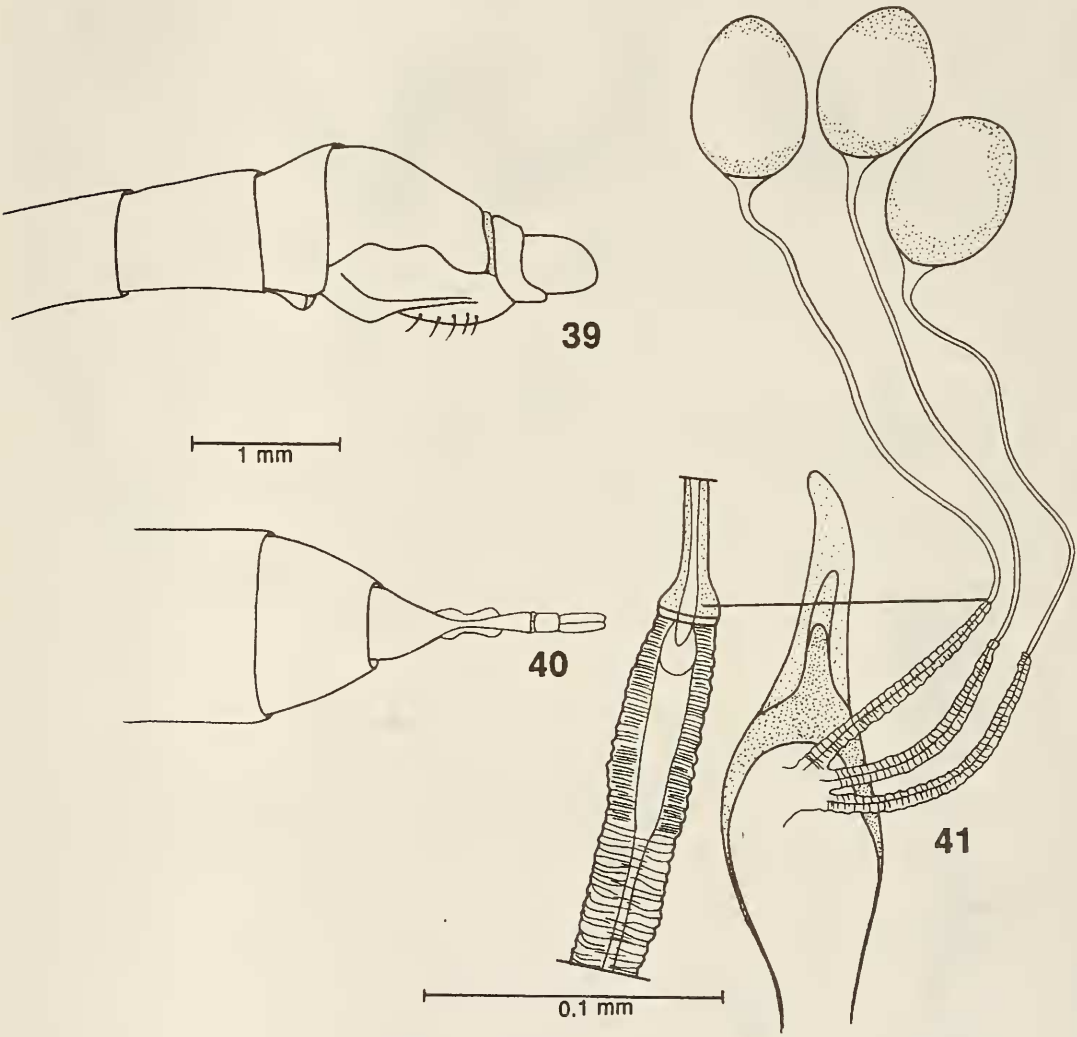
Figures 21-27. *Myaptexaria vexillaria* (Artigas). 21-22: head in frontal and lateral views; 23: profile of scutellum; 24-26: male terminalia in lateral, dorsal and ventral views; 27: aedeagus.



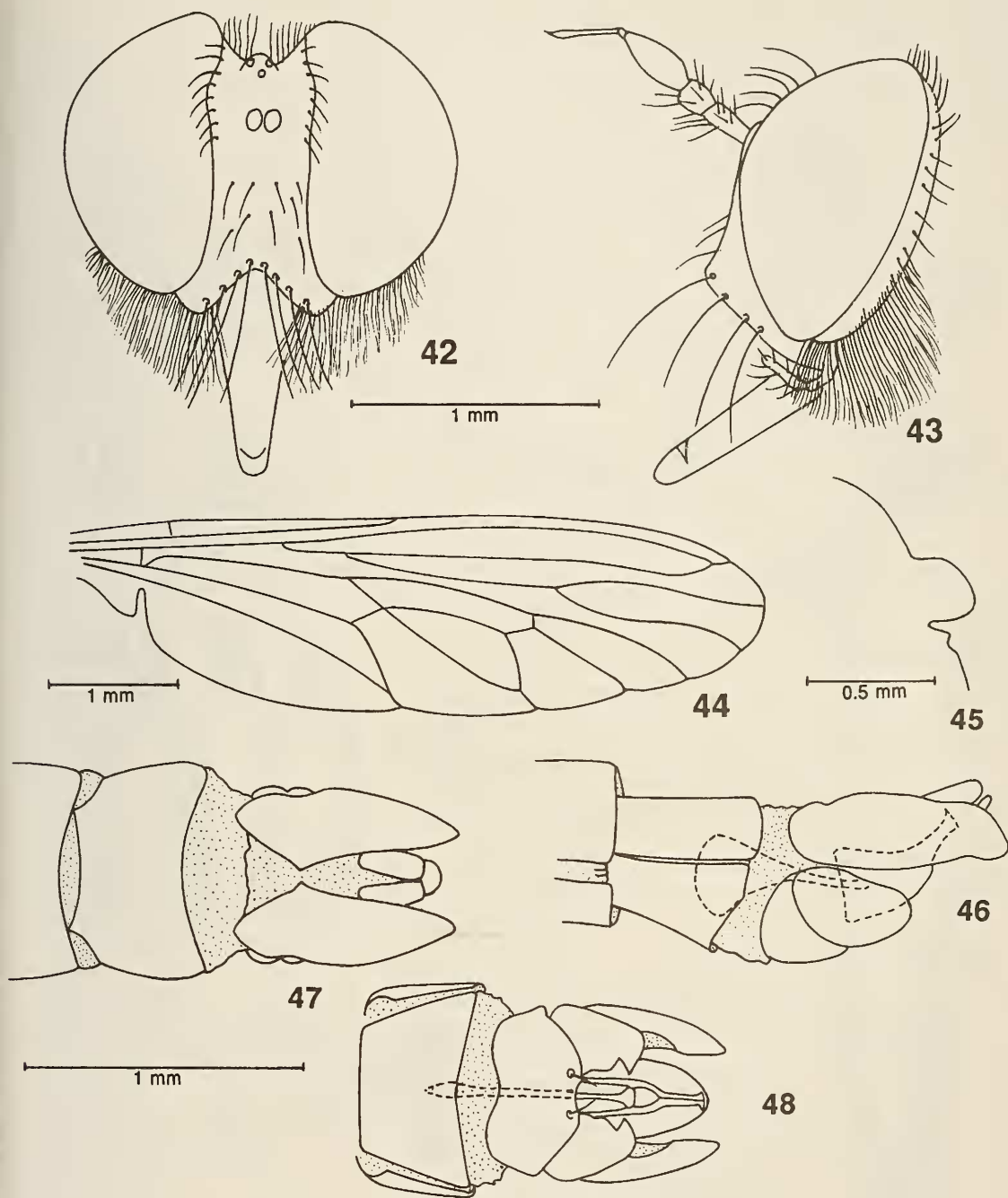
Figures 28-31. *Myaptexaria vexillaria* (Artigas). 28: female abdomen, ventral view, showing situation of spermathecae; 29: ovipositor, lateral view, showing situation of spermathecae; 30: ovipositor, dorsal view, 31: spermathecae.



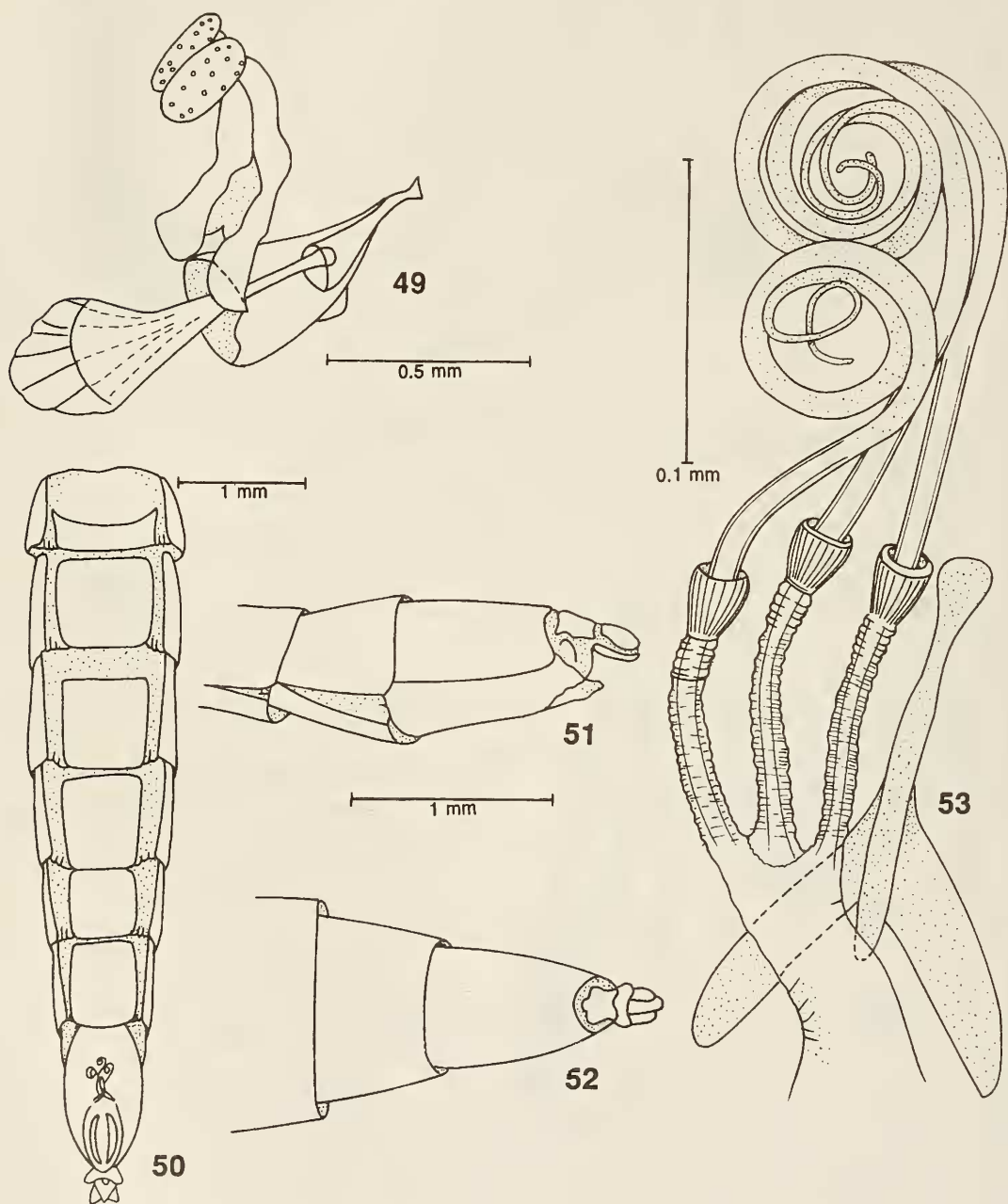
Figures 32-38. *Atractocoma nivosa* Artigas. 32-33: head in lateral and frontal views; 34: wing; 35: profile of scutellum; 36-38: male terminalia in lateral (and detail), dorsal and ventral views.



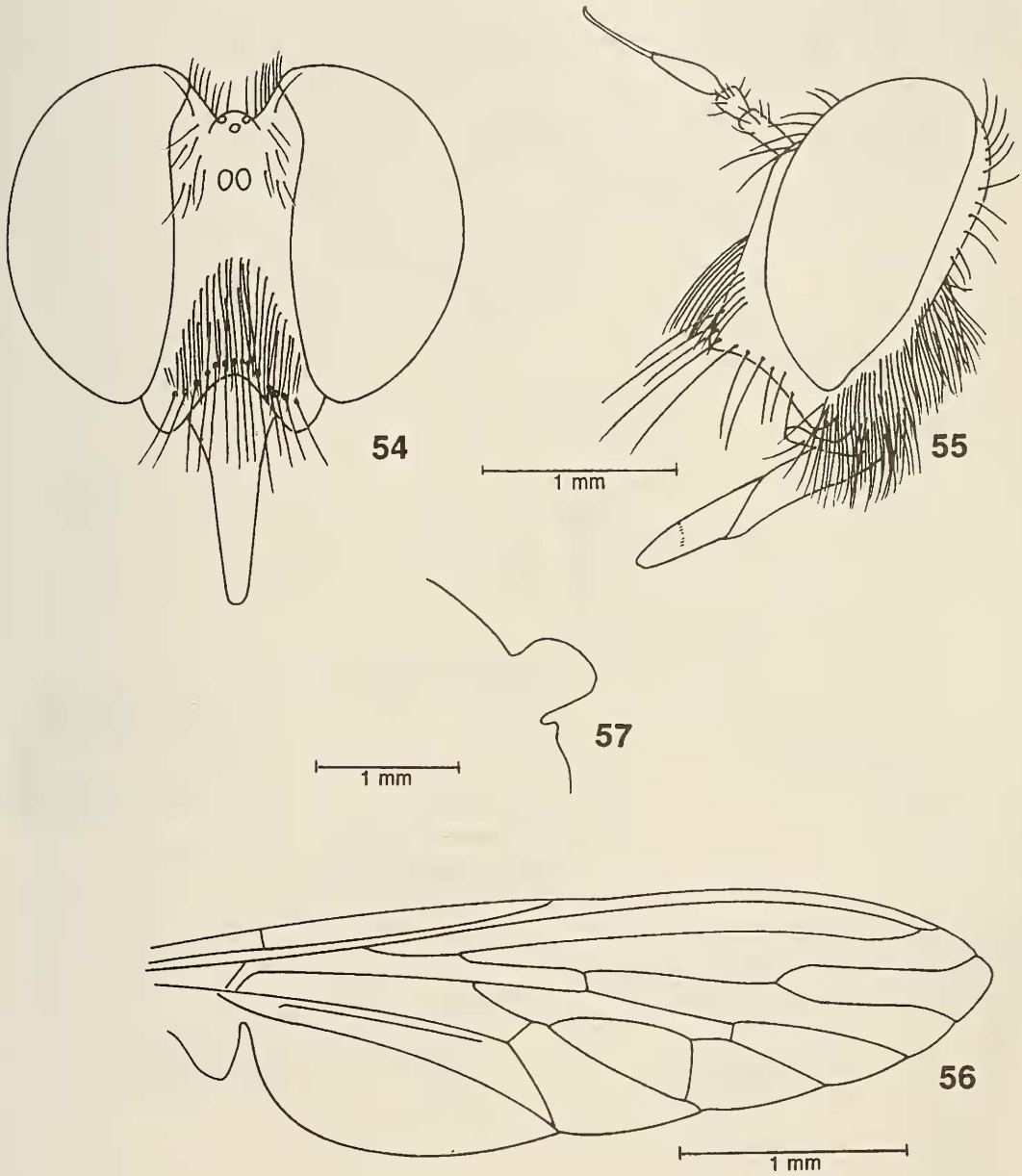
Figures 39-41. *Atractocoma nivosa* Artigas. 39-40: ovipositor in lateral and dorsal views; 41: spermathecae.



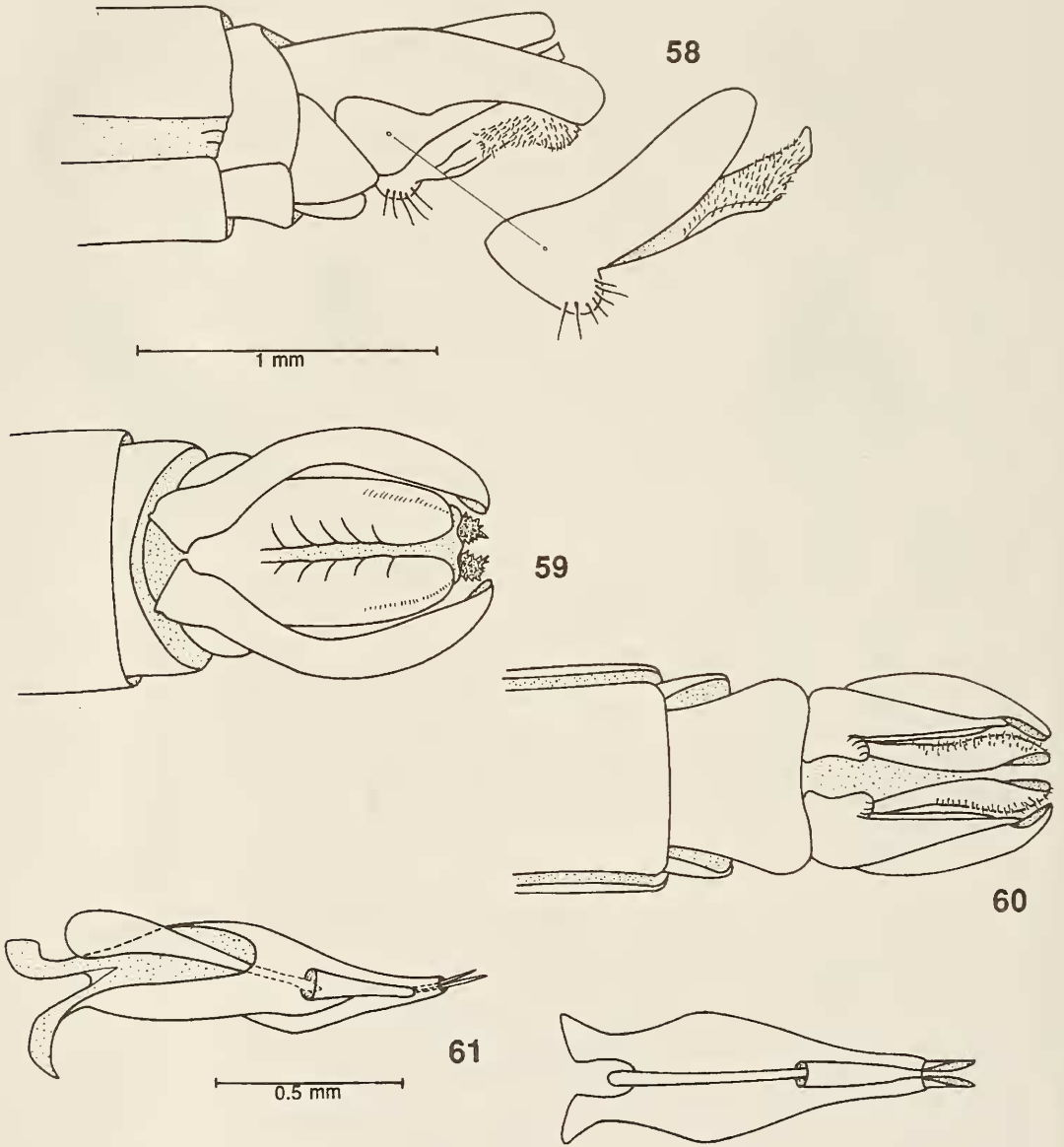
Figures 42-48. *Rhadinósoma calderense* Artigas. 42-43: head in frontal and lateral views; 44: wing; 45: profile of scutellum; 46-48: male terminalia in lateral, dorsal and ventral views.



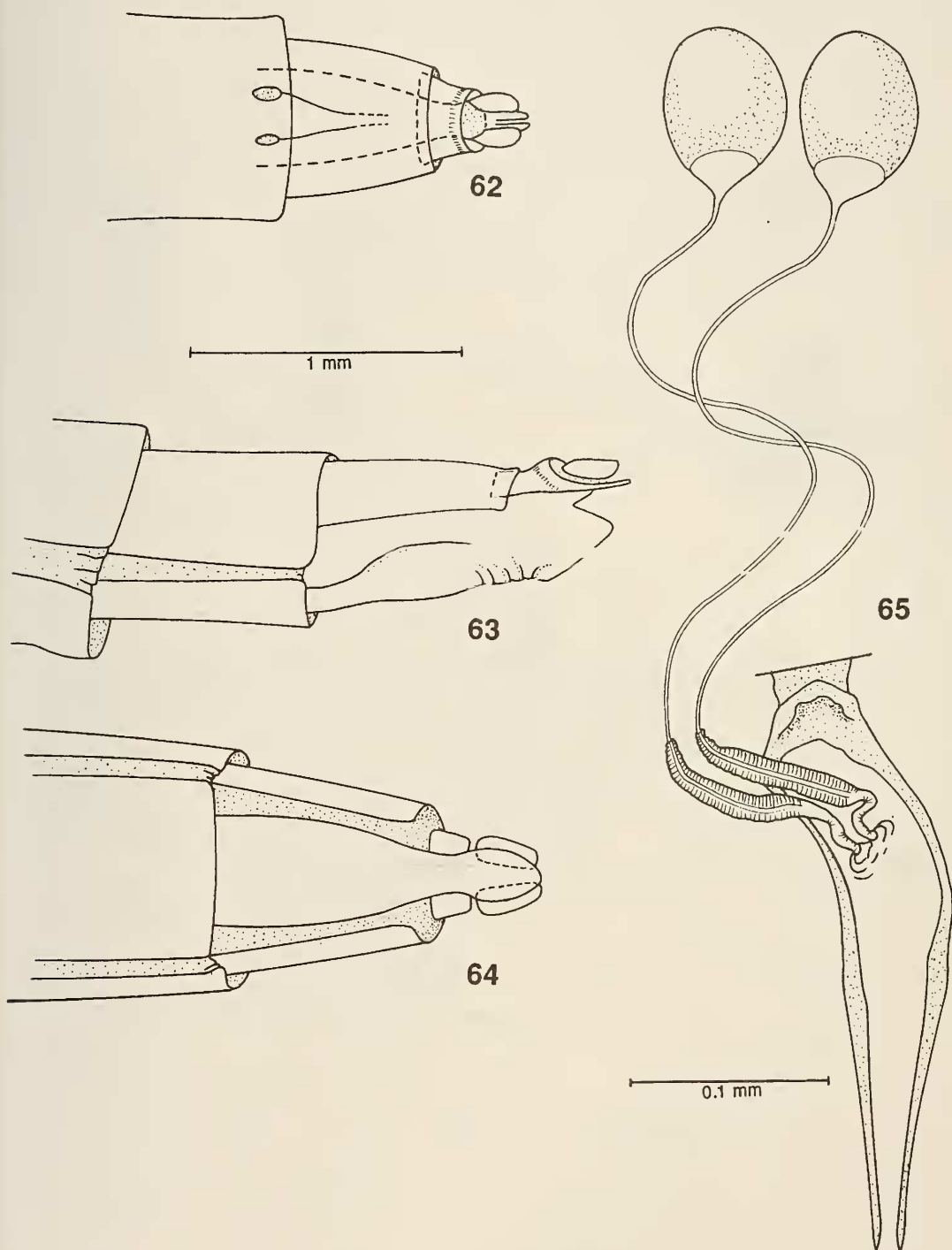
Figures 49-53. *Rhadinósoma calderense* Artigas. 49: aedeagus; 50: female abdomen, ventral view, showing situation of spermathecae; 51-52: ovipositor in lateral and dorsal views; 53: spermathecae.



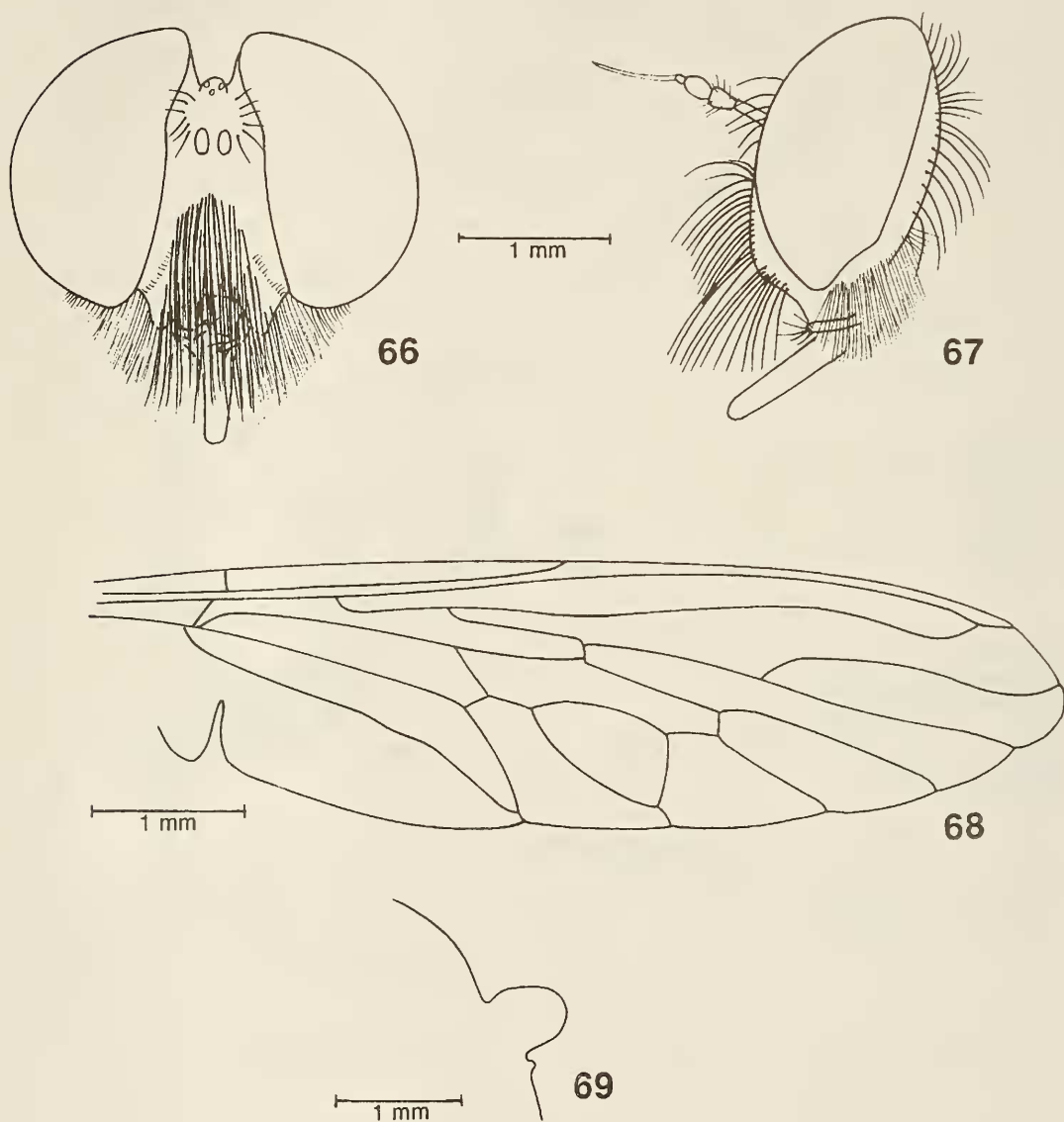
Figures 54-57. *Fucilla dorothyae* Martin. 54-55: head in frontal and lateral views; 56: wing; 57: profile of scutellum



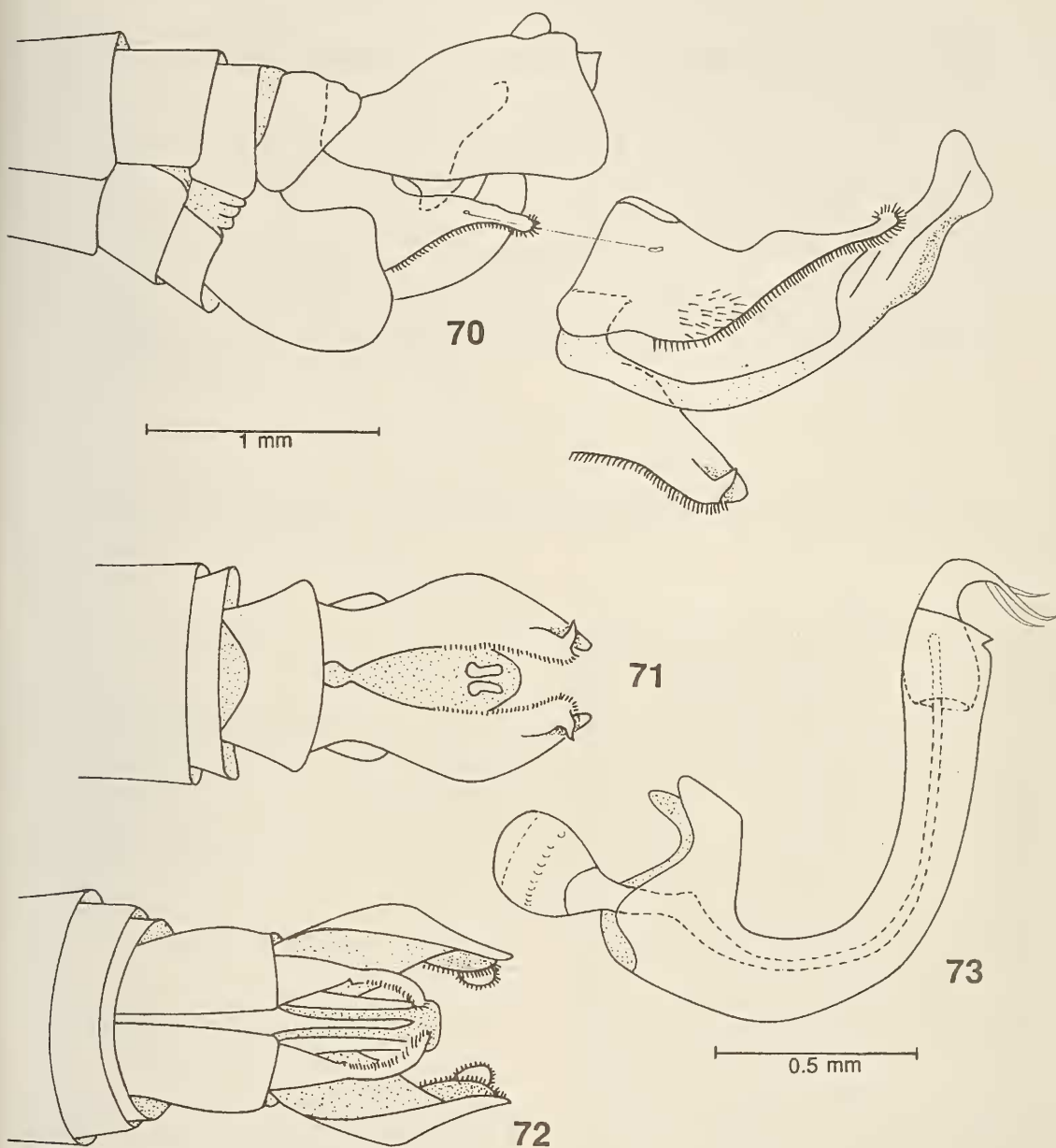
Figures 58-61. *Furcilla dorothyae* Mrtin. 58-60: male terminalia in lateral (and detail), dorsal and ventral views; 61: aedeagus, lateral and dorsal views.



Figures 62-65. *Furcilla dorothyae* Martin. 62: tip of female abdomen in dorsal view, showing situation of spermathecae; 63-64: ovipositor in lateral and ventral views; 65: spermathecae.



Figures 66-69. *Martinella lestes* (Williston). 66-67: head in frontal and lateral views; 68: wing; 69: profile of scutellum.



Figures 70-73. *Martinella lestes* (Williston). 70-72: male terminalia in lateral, dorsal and ventral views; 73: aedeagus.